

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A CO₂ incubator for incubating a culture medium accommodated in an each of a plurality of incubation space spaces defined in a storeroom, the CO₂ incubator comprising:

CO₂ gas concentration detection means for detecting a CO₂ concentration in each of the plurality of incubation space spaces,

air-agitating blower for agitating the air in the plurality of incubation space spaces to make uniform the state of the air in each said space,

a measurement air sampling tube and a first multi-position valve for selectively communicating the air sampling tube with the inside of each of the incubation space spaces,

a measurement air return tube and a second multi-position valve for selectively communicating the air return tube with the inside of the incubation space spaces,

a pump for sucking a part of the air in the plurality of incubation space spaces into the measurement air sampling tube, and returning the air to the incubation space spaces through the measurement air return tube after being taken by the CO₂ gas concentration detection means,

CO₂ gas concentration setting means for setting a desired CO₂ gas concentration to be present in the incubation space,

CO₂ gas supply means and a third multi-position valve for selectively supplying a CO₂ gas into each of the incubation space spaces, and

a control means for controlling the CO₂ gas supply means that executes operates each of said first, second and third multi-position valves to select the gas in any incubation space, detect the CO₂ gas concentration of the selected gas by the CO₂ gas concentration detection means, and control the supply of the CO₂ space to each incubation space in accordance with the detected CO₂ gas concentration by executing an operation of proportion, proportion and integration, or proportion and integration and differentiation on the basis of a deviation between the CO₂ gas concentration in

the incubation space as detected by said CO₂ gas concentration detection means and the a set CO₂ gas concentration value set by said CO₂ gas concentration setting means to calculate a CO₂ gas supply time per unit time to the incubation space and a stop time, and to supply CO₂ gas to the incubation space from the CO₂ gas supply means in accordance with the calculated supply time and stop time.

2. (Original) The CO₂ incubator according to claim 1, wherein the CO₂ gas concentration detection means is constituted of a CO₂ sensor using infrared rays.

3. Cancelled.

4. (Currently amended) The CO₂ incubator according to claim 3 1, wherein the control means displays the CO₂ gas concentration detected in each incubation space.

5. (Previously presented) The CO₂ incubator according to claim 2, wherein a plurality of incubation spaces are disposed in the incubator and

the control means selects the gas in any incubation space, detects the CO₂ gas concentration of the selected gas by the CO₂ gas concentration detection means, and controls the supply of the CO₂ gas to each incubation space in accordance with the detected CO₂ gas concentration.